

**DECLARATION**  
**Utility Application**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled INORGANIC PERMEATION LAYER FOR MICRO-ELECTRIC DEVICE, the specification of which

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is attached hereto OR  
was filed on July 15, 1999 as United States Application Serial No. 09/354,931 or PCT International Application No. \_\_\_\_\_ and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment(s) referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Date of Filing	Priority Claimed	
			Yes	No

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. Parent Application Number	PCT Parent Number	Parent Filing Date	Status-Patented, Pending or Abandoned
08/146,504		11/01/93	patented
08/271,882		07/07/94	pending
08/304,657		09/09/94	patented
08/534,454		09/27/95	patented

08/986,065	12/05/97	pending
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POWER OF ATTORNEY: As a named inventor, I hereby appoint as my attorneys and/or agents, with full power of substitution and revocation, to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: Roland N. Smoot, Reg. No. 18,718; Conrad R. Solum, Jr. Reg. No. 20,467; James W. Geriak, Reg. No. 20,233; Robert M. Taylor, Jr., Reg. No. 19,848; Samuel B. Ston , Reg. No. 19,297; Douglas E. Olson, Reg. No. 22,798; Robert E. Lyon, Reg. No. 24,171; Robert C. Weiss, Reg. No. 24,939; Richard E. Lyon, Jr., Reg. No. 26,300; John D. McConaghy, Reg. No. 26,773; William C. Steffin, Reg. No. 26,811; Coe A. Bloomberg, Reg. No. 26,605; J. Donald McCarthy, Reg. No. 25,119; John M. Benassi, Reg. No. 27,483; James H. Shalek, Reg. No. 29,749; Allan W. Jansen, Reg. No. 29,035; Robert W. Dickerson, Reg. No. 29,914; Roy L. Anderson, Reg. No. 30,240; David B. Murphy, Reg. No. 31,125; James C. Brooks, Reg. No. 29,898; Jeffrey M. Olson, Reg. No. 30,790; Steven D. Hemminger, R g. No. 30,755; Jerrold B. Reilly, Reg. No. 32,293; Paul H. Meier, Reg. No. 32,274; John A. Rafter, Jr., Reg. No. 31,653; Kenneth H. Ohriner, Reg. No. 31,646; Mary S. Consalvi, Reg. No. 32,212; Lois M. Kwasigroch, Reg. No. 35,579; Lawrence R. LaPorte, Reg. No. 38,948; Robert C. Laurenson, Reg. No. 34,206; Bradford J. Duft, Reg. No. 32,219; Suzanne L. Biggs, Reg. No. 30,158; Richard J. Warburg, Reg. No. 32,327; John M. Johnson, Reg. No. 33,334; Daniel M. Chambers, Reg. No. 34,561; Troy M. Schmelzer, Reg. No. 36,667; Jessica R. Wolff, Reg. No. 37,261; Howard N. Wisnia, Reg. No. 37,502; Douglas C. Murdock, Reg. No. 37,549; Jeffrey W. Guise, Reg. No. 34,613; F.T. Alexandra Mahaney, Reg. No. 37,668; Charles S. Berkman, Reg. No. 38,077; Edward M. Jordan, Reg. No. 40,666; John C. Kappos, Reg. No. 37,861; Keith Kind, Reg. No. 42,735; Stephen S. Komiczky, Reg. No. 34,853; Jonathan T. Losk, Reg. No. 39,755; Theodore S. Maceiko, Reg. No. 35,593; Hope E. Melville, Reg. No. 34,874; Jeffrey A. Miller, Reg. No. 35,874; Kurt T. Mulville, Reg. No. 37,194; Clarke W. Neumann, Reg. No. 39,789; Vicki Norton, Reg. No. 40,745; Kenneth S. Roberts, Reg. No. 38,283; Thomas R. Rouse, Reg. No. 40,793; James K. Sakaguchi, Reg. No. 41,285; Stephen C. Beuerle, Reg. No. 38,380; Carol A. Schneider, Reg. No. 34,923; Sheryl R. Silverstein, Reg. No. 40,812; Brent D. Sokol, Reg. No. 38,621; Jeffrey D. Tekanic, Reg. No. 36,031; Christopher A. Vanderlaan, Reg. No. 37,747; David E. Wang, Reg. No. 38,358; Lisa Ward Karmelich, Reg. No. 41,421; Michael J. Wise, Reg. No. 34,047; Wesley B. Ames, Reg. No. 40,893; Charles Balgenorth, Reg. No. 37,586; Thomas J. Brindisi, Reg. No. 40,348; James P. Brogan, Reg. No. 35,833; David T. Burse, Reg. No. 37,104; Bruce G. Chapman, Reg. No. 33,846; Farshad Farjami, Reg. No. 41,014; Charles C. Fowler, Reg. No. 39,675; and Corrine M. Freeman, Reg. No. 37,625.; of LYON & LYON, 633 West Fifth Street, Suite 4700, Los Angeles, California 90071-2066 telephone (619) 552-8400

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I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

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Date	9/22/99
Signature of Inventor	202
Date	20 SEPTEMBER 1999
Signature of Inventor	203
Date	21 September 1999

Signature of Inventor	204
Date	9/17/99
Signature of Inventor	205
Date	9/20/99
Signature of Inventor	206
Date	

(Signatures should conform to names as presented at 201 et seq. above.)



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PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

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1. Name of conveying party(ies):

JOHN R. HAVENS  
MICHAEL K. KRIHAK  
CHARLES H. GREEF  
DANIEL E. RAYMOND  
MICHAEL J. HELLER



Additional name(s) of conveying party(ies) attached?

☐ Yes ☒ No

2. Name and address of receiving party:

Name: NANOGEN, INC.

Street Address 10398 Pacific Center Court

City: San Diego

State: California

Zip: 92121

Additional name(s) & address(es) attached? ☐ Yes ☒ No

3. Nature of conveyance:

☒ Assignment

Execution Date: 17, 20, 21 and 22 September 1999

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is:

A. Patent Application No(s). 09/354,931

B. Patent No(s):

Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Richard J. Warburg

Internal Address: LYON & LYON LLP

633 West Fifth Street, Suite 4700  
Los Angeles, CA 90071-2066

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41): \$ 40.00

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ASSIGNMENT

For valuable consideration, we, JOHN R. HAVENS of San Diego, California and a citizen of USA; MICHAEL K. KRIHAK of San Diego, California and a citizen of USA; CHARLES E. H. GREEF of Ramona, California and a citizen of USA; DANIEL E. RAYMOND of San Diego, California and a citizen of CANADA and MICHAEL J. HELLER of Encinitas, California and a citizen of USA (hereinafter referred to as "Assignors") hereby assign to NANOGEN, INC., a corporation organized and existing under and by virtue of the laws of the State of Delaware and having its principal place of business at 10398 Pacific Center Court, San Diego, California 92121, and its successors and assigns (collectively hereinafter called "the Assignee"), the entire right, title and interest throughout the world in the invention and improvements which are the subject of an application for United States Patent filed July 15, 1999, U.S. Serial No. 09/354,931, and related applications and patents, entitled INORGANIC PERMEATION LAYER FOR MICRO-ELECTRIC DEVICE, this assignment including said application, any and all United States and foreign patents granted for any of said inventions or improvements, including all divisions, continuations, reissues, continuations-in-part and extensions thereof, and the right to claim priority based on the filing date of said application and based on the filing date of any provisional application of which said application claims the benefit under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other treaties of like purposes; and we authorize the Assignee to apply in all countries in our names or in its own name for patents and like rights of exclusion and for inventor's certificates for said inventions and improvements; and we agree for ourselves and our heirs, legal representatives and assigns, without further compensation, upon request to perform such lawful acts, to promptly provide Assignee with all pertinent facts and documents relating to said invention or application as may be known and accessible to us, to testify in any interference or litigation related to said invention or application and to sign such further applications, assignments, Preliminary Statements and other lawful documents as the Assignee may reasonably request to effectuate fully this Assignment.

The Assignors hereby covenant that no assignment, sale, agreement, or encumbrance has been or will be made or entered into which would conflict with this Agreement.

WITNESS my hand at San Diego, CA  
this 22<sup>nd</sup> day of September, 1999.

John R. Havens  
John R. Havens

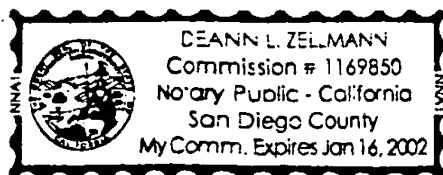
Recorded in Book 11600 Page 11

STATE OF CALIFORNIA )  
 ) ss  
COUNTY OF SAN DIEGO )

On 9/22/99 before me, DEANN L. ZELLMANN, personally appeared  
John R. Havens

☐ personally known to me - OR - ☒ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.



Deann L. Zellmann  
Notary Public in and for said County and State



WITNESS my hand at SAN DIEGO, CA  
this 20 day of SEPTEMBER, 1999.

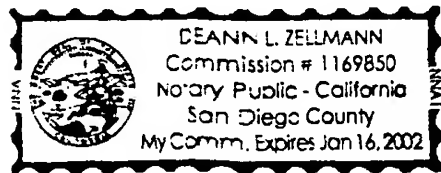
  
Michael K. Krihak

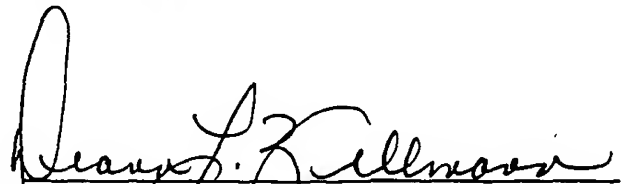
STATE OF CALIFORNIA )  
COUNTY OF SAN DIEGO ) ss

On 9/20/99 before me, DEANN L. ZELLMANN, personally appeared  
Michael K. Krihak

☐ personally known to me - OR - ☒ proved to me on the basis of satisfactory evidence to  
be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me  
that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their  
signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted,  
executed the instrument.

WITNESS my hand and official seal.



  
Notary Public in and for said County and State

WITNESS my hand at San Diego, CA  
this 21 day of September, 1999.

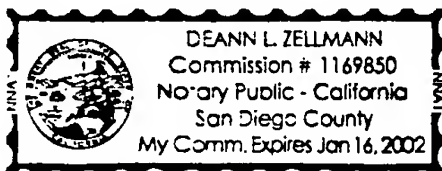
Charles E. Greef  
Charles E. Greef  
H.

STATE OF CALIFORNIA )  
 ) SS  
COUNTY OF SAN DIEGO )

On 9/21/99 before me, DEANN L. ZELLMANN, personally appeared  
Charles E. Greef  
H.

☐ personally known to me - OR - ☒ proved to me on the basis of satisfactory evidence to  
be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me  
that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their  
signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted,  
executed the instrument.

WITNESS my hand and official seal.



Deann L. Zellmann  
Notary Public in and for said County and State

WITNESS my hand at SAN DIEGO C.A.

this 17 day of SEPTEMBER, 1999.

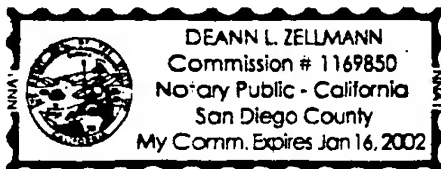
Dan Raymond  
Daniel E. Raymond

STATE OF CALIFORNIA )  
 ) ss  
COUNTY OF SAN DIEGO )

On 9/17/99 before me, DEANN L. ZELLMANN, personally appeared  
Daniel E. Raymond

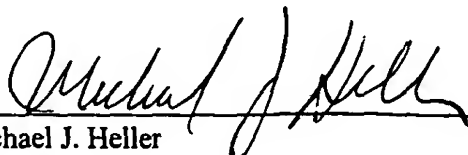
☐ personally known to me - OR - ☒ proved to me on the basis of satisfactory evidence to  
be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me  
that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their  
signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted,  
executed the instrument.

WITNESS my hand and official seal.



Deann L. Zellmann  
Notary Public in and for said County and State

WITNESS my hand at San Diego CA  
this 26 day of September, 1999.

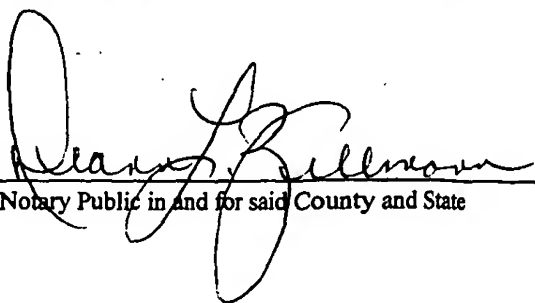
  
Michael J. Heller

STATE OF CALIFORNIA )  
 ) ss  
COUNTY OF SAN DIEGO )

On 9/20/99 before me, DEANN L. ZELLMANN, personally appeared  
Michael J. Heller

☐ personally known to me - OR - ☒ proved to me on the basis of satisfactory evidence to  
be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me  
that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their  
signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted,  
executed the instrument.

WITNESS my hand and official seal.

  
Notary Public in and for said County and State

